D.3.2 Description of Essential Fish Habitat for the Groundfish Resources of the GOA Region

D.3.2.1 EFH Information Levels for GOA Groundfish

GOA Species	Eggs	Larvae	Early Juvenile	Late Juvenile	Adult
Walleye pollock	1	1	x	1	1
Pacific cod	1	1	x	1	1
Yellowfin sole	1	1	x	1	1
Arrowtooth flounder	x	1	x	1	1
Rock sole	x	1	x	1	1
Alaska plaice	1	1	x	1	1
Rex sole	1	1	x	1	1
Dover sole	1	1	x	1	1
Flathead sole	1	1	x	1	1
Sablefish	1	1	x	1	1
Pacific ocean perch	x	1	x	1	1
Shortraker/rougheye rockfish	x	1	x	x	1
Northern rockfish	x	1	x	x	1
Thornyhead rockfish	x	1	x	1	1
Yelloweye rockfish	x	1	x	1	1
Dusky rockfish	x	1	x	x	1
Atka mackerel	x	1	x	x	1
Sculpins	x	x	x	1	1
Skates	x	x	x	x	1
Sharks	x	x	x	x	x
Forage fish complex	x	x	x	x	x
Squid	x	x	x	1	1
Octopus	x	x	x	x	x

x - No information available.

D.3.2.2 EFH Text Descriptions for GOA Groundfish

EFH Description for GOA Walleye Pollock

Eggs
EFH for walleye pollock eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-110.

Larvae
EFH for larval walleye pollock is the general distribution area for this life stage, located in epipelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-111.

Early Juveniles—No EFH Description Determined
Limited information exists to describe walleye pollock early juvenile larval general distribution; however, the data cannot be analyzed in the same manner as directed by the approach for Alternative 3.

Late Juveniles
EFH for late juvenile walleye pollock is the general distribution area for this life stage, located in the lower and middle portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf along the throughout the GOA, as depicted in Figure D-112. No known preference for substrates exist.

Adults
EFH for adult walleye pollock is the general distribution area for this life stage, located in the lower and middle portion of the water column along the entire shelf (0 to 200) and slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-112. No known preference for substrates exist.

EFH Description for GOA Pacific Cod

Eggs
EFH for Pacific cod eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper (200 to 500 m) slope throughout the GOA wherever there are soft substrates consisting of mud and sand, as depicted in Figure D-113.

Larvae
EFH for larval Pacific cod is the general distribution area for this life stage, located in pelagic waters along the inner (0 to 50 m) and middle (50 to 100 m) shelf throughout the GOA wherever there are soft substrates consisting of mud and sand, as depicted in Figure D-114.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile Pacific cod is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are soft substrates consisting of sand, mud, sandy mud, and muddy sand, as depicted in Figure D-115.

Adults
EFH for adult Pacific cod is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are soft substrates consisting of sand, mud, sandy mud, muddy sand, and gravel, as depicted in Figure D-115.

EFH Description for GOA Yellowfin Sole

Eggs
EFH for yellowfin sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper (200 to 500 m) slope throughout the GOA, as depicted in Figure D-116.

Larvae
EFH for larval yellowfin sole is the general distribution area for this life stage, located in pelagic waters along the shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA, as depicted in Figure D-117.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile yellowfin sole is the general distribution area for this life stage, located in the lower portion of the water column within nearshore bays and along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are soft substrates consisting mainly of sand, as depicted in Figure D-118.

Adults
EFH for adult yellowfin sole is the general distribution area for this life stage, located in the lower portion of the water column within nearshore bays and along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are soft substrates consisting mainly of sand, as depicted in Figure D-118.

EFH Description for GOA Arrowtooth Flounder

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval arrowtooth flounder is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-119.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile arrowtooth flounder is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the GOA wherever there are softer substrates consisting of gravel, sand, and mud, as depicted in Figure D-120.

Adults
EFH for adult arrowtooth flounder is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50), middle (50 to 100 m), and outer (100 to 200 m)

shelf and upper slope (200 to 500 m) throughout the GOA wherever there are softer substrates consisting of gravel, sand, and mud, as depicted in Figure D-120.

EFH Description for GOA Rock Sole

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval rock sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-121.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile rock sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand, gravel, and cobble, as depicted in Figure D-122.

Adults
EFH for adult rock sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand, gravel, and cobble. Depicted in Figure D-122.

EFH Description for GOA Alaska Plaice

Eggs
EFH for Alaska plaice eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA in the spring, as depicted in Figure D-123.

Larvae
EFH for larval Alaska plaice is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA, as depicted in Figure D-124.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile Alaska plaice is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-125.

Adults
EFH for adult Alaska plaice is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-125.

EFH Description for GOA Rex Sole

Eggs
EFH for rex sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA in the spring, as depicted in Figure D-126.

Larvae
EFH for larval rex sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA, as depicted in Figure D-127.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for juvenile rex sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are substrates consisting of gravel, sand, and mud, as depicted in Figure D-128.

Adults
EFH for adult rex sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are substrates consisting of gravel, sand, and mud, as depicted in Figure D-128.

EFH Description for GOA Dover Sole

Eggs
EFH for Dover sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-129.

Larvae
EFH for larval Dover sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-130.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile Dover sole is the general distribution area for this life stage, located in the lower portion of the water column along the middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of sand and mud, as depicted in Figure D-131.

Adults
EFH for adult Dover sole is the general distribution area for this life stage, located in the lower portion of the water column along the middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of sand and mud, as depicted in Figure D-131.

EFH Description GOA Flathead Sole

Eggs
EFH for flathead sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-132.

Larvae
EFH for larval flathead sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-133.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for juvenile flathead sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-134.

Adults
EFH for adult flathead sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-134.

EFH Description for GOA Sablefish

Eggs
EFH for sablefish eggs is the general distribution area for this life stage, located in deeper waters along the slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-135.

Larvae
EFH for larval sablefish is the general distribution area for this life stage, located in epipelagic waters along the middle shelf (50 to 100 m), outer shelf (100 to 200 m), and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-136.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-137.

Adults
EFH for adult sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-137.

EFH Description for GOA Pacific Ocean Perch

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval Pacific ocean perch is the general distribution area for this life stage, located in the middle to lower portion of the water column along the inner shelf (0 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m), and upper slope (200 to 500 m) throughout the GOA as depicted in Figure D-138.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile Pacific ocean perch is the general distribution area for this life stage, located in the middle to lower portion of the water column along the inner shelf (0 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m), and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of cobble, gravel, mud, sandy mud, or muddy sand, as depicted in Figure D-139.

Adults
EFH for adult Pacific ocean perch is the general distribution area for this life stage, located in the lower portion of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of cobble, gravel, mud, sandy mud, or muddy sand, as depicted in Figure D-139.

EFH Descriptions for GOA Shortraker and Rougheye Rockfish

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval shortraker and rougheye rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults
EFH for adult shortraker and rougheye rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) regions throughout the GOA wherever there are substrates consisting of mud, sand, sandy mud, muddy sand, rock, cobble, and gravel, as depicted in Figure D-140.

EFH Description for GOA Northern Rockfish

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval northern rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults
EFH for adult northern rockfish is the general distribution area for this life stage, located in the middle and lower portions of the water column along the outer slope (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates of cobble and rock, as depicted in Figure D-141.

EFH Description for GOA Thornyhead Rockfish

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval thornyhead rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile Thornyhead rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the middle and outer shelf (50 to 200 m) and upper to lower slope (200 to 1,000 m) throughout the GOA wherever there are substrates of mud, sand, rock, sandy mud, muddy sand, cobble, and gravel, as depicted in Figure D-142.

Adults
EFH for adult Thornyhead rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the middle and outer shelf (50 to 200 m) and upper to lower slope (200 to 1,000 m) throughout the GOA wherever there are substrates of mud, sand, rock, sandy mud, muddy sand, cobble, and gravel, as depicted in Figure D-142.

EFH Definition for GOA Yelloweye Rockfish

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval yelloweye rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for late juvenile Yelloweye rockfish is the general distribution area for this life stage, located in the lower portion of the water column within bays and island passages and along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the GOA wherever there are substrates of rock and in areas of vertical relief, such as crevices, overhangs, vertical walls, coral, and larger sponges, as depicted in Figure D-143.

Adults
EFH for adult Yelloweye rockfish is the general distribution area for this life stage, located in the lower portion of the water column within bays and island passages and along the inner shelf (0 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates of rock and in areas of vertical relief, such as crevices, overhangs, vertical walls, coral, and larger sponges, as depicted in Figure D-143.

EFH Description for GOA Dusky Rockfish

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval dusky rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults
EFH for adult Dusky rockfish is the general distribution area for this life stage, located in the middle and lower portions of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates of cobble, rock, and gravel, as depicted in Figure D-144.

EFH Description for GOA Atka Mackerel

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae
EFH for larval atka mackerel is the general distribution area for this life stage, located in epipelagic waters along the shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-145.

Early Juveniles —No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults
EFH for adult Atka mackerel is the general distribution area for this life stage, located in the entire water column, from sea surface to the sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the GOA wherever there are substrates of gravel and rock and in vegetated areas of kelp, as depicted in Figure D-146.

EFH Description for GOA Sculpins

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae—No EFH Description Determined
Insufficient information is available.

Juveniles
EFH for juvenile sculpins is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), outer shelf (100 to 200 m) and portions of the upper slope (200 to 500 m) throughout the GOA wherever there are substrates of rock, sand, mud, cobble, and sandy mud, as depicted in Figure D-147.

Adults
EFH for adult sculpins is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), outer shelf (100 to 200 m) and portions of the upper slope (200 to 500 m) throughout the GOA wherever there are substrates of rock, sand, mud, cobble, and sandy mud, as depicted in Figure D-147.

EFH Description for GOA Skates

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae—No EFH Description Determined
Insufficient information is available.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults
EFH for adult skates is the general distribution area for this life stage, located in the lower portion of the water column on the shelf (0 to 200 m) and the upper slope (200 to 500 m) throughout the GOA wherever there are of substrates of mud, sand, gravel, and rock, as depicted in Figure D-148.

EFH Description for GOA Sharks

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae—No EFH Description Determined
Insufficient information is available.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults—No EFH Description Determined
Insufficient information is available.

EFH Description for GOA Forage Fish Complex—Eulachon, Capelin, Sand Lance, Sand Fish, Euphausiids, Myctophids, Pholids, Gonostomatids, etc.

Eggs—No EFH Description Determined
Insufficient information is available.

Larvae—No EFH Description Determined
Insufficient information is available.

Early Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults. No EFH Description Determined
Insufficient information is available.

EFH Description for GOA Squid

Eggs—No EFH Description Determined
Insufficient information is available.

Young Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles
EFH for older juvenile squid is the general distribution area for this life stage, located in the entire water column, from the sea surface to sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer (200 to 500 m) shelf and the entire slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-149.

Adults
EFH for adult squid is the general distribution area for this life stage, located in the entire water column, from the sea surface to sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer (200 to 500 m) shelf and the entire slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-149.

EFH Description for GOA Octopus

Eggs—No EFH Description Determined
Insufficient information is available.

Young Juveniles—No EFH Description Determined
Insufficient information is available.

Late Juveniles—No EFH Description Determined
Insufficient information is available.

Adults. No EFH Description Determined
Insufficient information is available.

D.3.2.3 EFH Map Descriptions for GOA Groundfish

Figures D-110 through D-149 show EFH distribution under Alternative 3 for the GOA groundfish species as described in Section D.3.2.2.